UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

MAR 25 1998

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, Kansas 67504-1839

RE: **UIC MINOR PERMIT MODIFICATION**
Conversion of Additional Well to
Antelope Creek Waterflood
EPA Area Permit UT2736-00000
Duchesne County, Utah

Dear Ms. Turner:

Your letter of March 11, 1998, requesting that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood, as authorized under EPA Area Permit #UT2736-00000 is hereby granted.

NAME	LOCATION	EPA WELL PERMIT NO.
Ute Tribal #06-16	SE/SE Section 6 T 5 S - R 3 W Duchesne County, UT	*#UT2736-04436*

This additional well is within the boundary of the existing area permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made by minor permit modification according to the terms and conditions of that permit. Unless specifically mentioned in this Minor Permit Modification, all terms and conditions of the original permit will apply to the construction, operation, monitoring, and plugging and abandonment of this additional injection well. The proposed well location, well schematic, conversion procedures, plugging and abandonment plan and schematic, submitted by your office, have been reviewed and approved as follows:

(1) The **conversion** of this production well has been reviewed, and found satisfactory, therefore, no corrective action is required.

(2) **Maximum injection pressure (Pmax)** - the permittee shall limit the maximum surface injection pressure (Pmax) to 2125 psig. Permit provision have been made that allow the operator to request an increase or decrease in the injection pressure.

The calculations for the fracture gradient was estimated from instantaneous shut-in pressures (ISIP) observed during fracturing treatments performed on five (5) individually fraced zones within the Ute Tribal #06-16 well. The lessor of the five ISIP's was used to calculate the theoretical maximum allowable surface injection pressure as shown below:

$$Pmax = [Fg - 0.433\ (Sg)]\ d$$

Where:

Pmax = Maximum surface injection pressure at wellhead

d = 4040' shallowest perforations after conversion

Sg = Specific gravity of injected water

Pmax = [0.96 - .433 (1.00)] 4040

Pmax = 2125 psig

Until such time as the permittee demonstrates that a fracture gradient other than 0.96 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure **(Pmax) for this well will be 2125 psig.**

(3) The **plugging and abandonment plan and schematic**, submitted by your office, has been reviewed, and approved.

Prior to commencing injection into this well, permittee must fulfill permit condition Part II, C. 2. and have received **separate written authorization to inject by the Environmental Protection Agency.** In summary, these requirements for your newly permitted injection well are:

(1) All conversion is complete and the permittee has submitted a completed **Well Rework Record (EPA Form 7520-12)**.

(2) The **pore pressure has been determined.**

(3) The well has successfully completed and passed a **mechanical integrity test (MIT)**; EPA form enclosed.

All other provisions and conditions of the permit remain as originally issued.

If you have any questions, please contact Mr. Chuck Williams at (303) 312-6625. Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing **MAIL CODE 8P2-W-GW**. Thank you for your continued cooperation.

Sincerely,

Kerrigan Clough

Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

Enclosure: EPA Form

cc: Mr. Ronald Wopsock, Chairman
Uintah & Ouray Business Committee

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka
BLM - Vernal District Office

Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

Mechanical Integrity Test
Casing/Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program, UIC Implementation Section, 8P2-W-GW
999 18th Street, Suite 500, Denver, CO 80202-2466

EPA Witness:_____ Date___/___/9 Time_____ am/pm

Test conducted by: _____

Others present: _____

Well name _____ EPA Number _____

Field name _____

Location _____ qtr qtr; _____Section; _____Township; _____Range

Owner/Operator _____

Time	Test #1	Test #2	Test #3
0 min	_____ psig	_____ psig	_____ psig
5	_____	_____	_____
10	_____	_____	_____
15	_____	_____	_____
20	_____	_____	_____
25	_____	_____	_____
30 min	_____	_____	_____
35	_____	_____	_____
40	_____	_____	_____
45	_____	_____	_____
50	_____	_____	_____
55	_____	_____	_____
60 min	_____	_____	_____
Tubing press	_____ psig	_____ psig	_____ psig
Result (circle)	Pass Fail	Pass Fail	Pass Fail

Signature of Witness: _____

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